

## CLAIMS

## WE CLAIM:

1. A method of communicating between nodes in a peer-to-peer network to enable a user to do at least one of collaboration and real-time communication with users on other nodes in the peer-to-peer network, the method comprising the steps of:

creating a graph by calling a PeerGraphCreate function;

listening for incoming connections by calling a PeerGraphListen function;

sending an identifier of the graph to the other nodes;

registering for events of interest by calling a PeerGraphRegisterEvent function;

capturing data corresponding to the at least one of collaboration and real-time communication; and

adding a record that contains one of a link to the data and the data using the PeerGraphAddRecord function, thereby propagating the record to the other nodes.

2. The method of claim 1 further comprising the step of updating the record when the at least one of collaboration and real-time communication changes.

3. The method of claim 1 wherein the at least one of collaboration and real-time communication comprises collaboration and wherein the step of capturing data includes the step of capturing movement of an object on a whiteboard.

4. The method of claim 3 wherein the step of capturing movement of an object on a whiteboard includes the step of capturing position coordinates of a line being drawn on the whiteboard.

5. The method of claim 1 wherein the at least one of collaboration and real-time communication comprises real-time communication and wherein the step of capturing data includes the step of capturing text.

6. The method of claim 1 further comprising the step of deleting data in the record by calling a PeerGraphDeleteRecord function.

7. The method of claim 1 further comprising the step of deleting the data by calling the PeerGraphAddRecord function to add a new Record and wherein the data in the new Record cancels the data in the Record.

8. The method of claim 1 further comprising the steps of:  
by each of the other nodes:

opening the graph by calling a PeerGraphOpen function; and  
connecting to the node by calling a PeerGraphConnect function.

9. The method of claim 8 further comprising the step of getting the record by calling a PeerGraphGetRecord function.

10. The method of claim 1 further comprising the step of closing the graph by calling the PeerGraphClose function.

11. A method of communicating between nodes in a peer-to-peer network to enable a user to do at least one of collaboration and real-time communication with users on other nodes in the peer-to-peer network, the method comprising the steps of:

- creating a group by calling a PeerGroupCreate function;
- calling a PeerGroupConnect function;
- registering for events of interest by calling a PeerGroupRegisterEvent function;
- capturing data corresponding to the at least one of collaboration and real-time communication; and

- adding a record that contains one of a pointer to the data and the data using the PeerGroupAddRecord function, thereby propagating the record to the other nodes.

12. The method of claim 11 further comprising the step of updating the record when the at least one of collaboration and real-time communication changes.

13. The method of claim 11 wherein the at least one of collaboration and real-time communication comprises collaboration and wherein the step of capturing data includes the step of capturing movement of an object on a whiteboard.

14. The method of claim 13 wherein the step of capturing movement of an object on a whiteboard includes the step of capturing position coordinates of a line being drawn on the whiteboard.

15. The method of claim 11 wherein the at least one of collaboration and real-time communication comprises real-time communication and wherein the step of capturing data includes the step of capturing text

16. The method of claim 11 further comprising the step of deleting data in the record by calling a PeerGroupDeleteRecord function.

17. The method of claim 11 further comprising the step of deleting the data by calling the PeerGroupAddRecord function to add a new Record and wherein the data in the new Record cancels the data in the Record.

18. The method of claim 11 further comprising the steps of:  
by each of the other nodes:

joining the group by calling a PeerGroupJoin function; and  
connecting to the group by calling a PeerGroupConnect function.

19. The method of claim 18 further comprising the step of getting the record by calling a PeerGroupGetRecord function.

20. The method of claim 1 further comprising the step of closing the group by calling the PeerGroupClose function.

21. The method of claim 11 further comprising the steps of:  
inviting users on other nodes to join the group by calling the PeerGroupCreateInvitation function; and  
sending an invitation created by the PeerGroupCreateInvitation function to another node.

22. The method of claim 21 further comprising the steps of:  
by each other node:  
calling a PeerGroupIdentityGetInfo function to obtain information for joining the group;  
sending the information to the node to provide the node data for the PeerGroupCreateInvitation function.

23. A computer-readable medium having computer-executable instructions for communicating between nodes in a peer-to-peer network to enable a user to do at least one of collaboration and real-time communication with users on other nodes in the peer-to-peer network, the computer-executable instructions for performing the steps comprising:

creating a graph by calling a PeerGraphCreate function;  
listening for incoming connections by calling a PeerGraphListen function;

sending an identifier of the graph to the other nodes;  
registering for events of interest by calling a PeerGraphRegisterEvent function;  
capturing data corresponding to the at least one of collaboration and real-time communication; and  
adding a record that contains one of a link to the data and the data using the PeerGraphAddRecord function, thereby propagating the record to the other nodes.

24. The computer-readable medium of claim 23 having further computer-executable instructions for performing the step comprising updating the record when the at least one of collaboration and real-time communication changes.

25. The computer-readable medium of claim 23 wherein the at least one of collaboration and real-time communication comprises collaboration and wherein the step of capturing data includes the step of capturing movement of an object on a whiteboard.

26. The computer-readable medium of claim 25 wherein the step of capturing movement of an object on a whiteboard includes the step of capturing position coordinates of a line being drawn on the whiteboard.

27. The computer-readable medium of claim 23 wherein the at least one of collaboration and real-time communication comprises real-time communication and wherein the step of capturing data includes the step of capturing text

28. The computer-readable medium of claim 23 having further computer-instructions for performing the step comprising deleting data in the record by calling a `PeerGraphDeleteRecord` function.

29. The computer-readable medium of claim 23 having further computer-instructions for performing the step comprising deleting the data by calling the `PeerGraphAddRecord` function to add a new Record and wherein the data in the new Record cancels the data in the Record.

30. The computer-readable medium of claim 23 having further computer-instructions for performing the steps comprising:

by each of the other nodes:

opening the graph by calling a `PeerGraphOpen` function; and  
connecting to the node by calling a `PeerGraphConnect` function.

31. The computer-readable medium of claim 30 having further computer-instructions for performing the step comprising getting the record by calling a `PeerGraphGetRecord` function.

32. The computer-readable medium of claim 23 having further computer-instructions for performing the step comprising closing the graph by calling the `PeerGraphClose` function.

33. A computer-readable medium having computer-executable instructions for communicating between nodes in a peer-to-peer network to enable a user to do at least one of collaboration and real-time communication with users on other nodes in the peer-to-peer network, the computer-executable instructions performing the steps comprising:

- creating a group by calling a PeerGroupCreate function;
- calling a PeerGroupConnect function;
- registering for events of interest by calling a PeerGroupRegisterEvent function;
- capturing data corresponding to the at least one of collaboration and real-time communication; and

adding a record that contains one of a pointer to the data and the data using the PeerGroupAddRecord function, thereby propagating the record to the other nodes.

34. The computer-readable medium of claim 33 having further computer-instructions for performing the step comprising updating the record when the at least one of collaboration and real-time communication changes.

35. The computer-readable medium of claim 33 wherein the at least one of collaboration and real-time communication comprises collaboration and wherein the step of capturing data includes the step of capturing movement of an object on a whiteboard.

36. The computer-readable medium of claim 35 wherein the step of capturing movement of an object on a whiteboard includes the step of capturing position coordinates of a line being drawn on the whiteboard.



37. The computer-readable medium of claim 33 wherein the at least one of collaboration and real-time communication comprises real-time communication and wherein the step of capturing data includes the step of capturing text

38. The computer-readable medium of claim 33 having further computer-instructions for performing the step comprising deleting data in the record by calling a `PeerGroupDeleteRecord` function.

39. The computer-readable medium of claim 33 having further computer-instructions for performing the step comprising deleting the data by calling the `PeerGroupAddRecord` function to add a new Record and wherein the data in the new Record cancels the data in the Record.

40. The computer-readable medium of claim 33 having further computer-instructions for performing the steps comprising:

by each of the other nodes:

joining the group by calling a `PeerGroupJoin` function; and

connecting to the group by calling a `PeerGroupConnect` function.

41. The computer-readable medium of claim 40 further comprising the step of getting the record by calling a `PeerGroupGetRecord` function.

42. The computer-readable medium of claim 33 having further computer-instructions for performing the step comprising closing the group by calling the `PeerGroupClose` function.

43. The computer-readable medium of claim 33 having further computer-instructions for performing the steps comprising:

inviting users on other nodes to join the group by calling the `PeerGroupCreateInvitation` function; and

sending an invitation created by the `PeerGroupCreateInvitation` function to another node.

44. The computer-readable medium of claim 43 having further computer-instructions for performing the steps comprising:

by each other node:

calling a `PeerGroupIdentityGetInfo` function to obtain information for joining the group;

sending the information to the node to provide the node data for the `PeerGroupCreateInvitation` function.